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EJOFORM®

Reduction of cost and effort by application of multifunctional fastening technique

EJOT The Quality Connection®

EJOFORM®

...better economic efficiency
...higher flexibility
...more possibilities

EJOFORM® is the innovative and secure screw connection that additionally offers further functions such as holder, break bolt, stand-off, or adjustment element. Manufactured in a multiple step cold-form process, the EJOFORM® concept enables cost and material savings from the beginning.

EJOFORM® parts are more than just the mechanical connection of multiple components. They are born out of our engineering which is geared towards the specific application, a vast know-how that spans across various industrial sectors, and a technology which is superior to a turning manufacturing process.

EJOFORM® parts are innovative fastening- and construction solutions. Already, EJOFORM® is setting standards with its product advantage. Our experts‘ creative development skills and construction know-how in various projects, as well as the cold form technology perfected by Ejot are a rational and future oriented product solution.

By using EJOFORM® parts the user gets a custom made collection of functions.

- **100% coordinated development application**
- **ease of assembly**
- **reduction of material and inventory cost**
- **multiple usage**

Convincing real life example.

Example: simplification
EJOFORM® head screw
Function: replaces standard screw, washer, and stand-off

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Example: multiple usages
EJOFORM FDS® snap bolt with soft boss
Function: hole drilling, thread forming, snapping function

Example: engineering
EJOFORM® Hollow screw
Function: tolerance compensation, thread forming

Example: supplementary properties
EJOFORM® axle
Function: weight reduction of 70%, chipless forming of interior thread in combination with thread forming screw, irreversibility

Example: flexibility
Thin, slim parts in lengths up to approximately 600 mm

Multi station cold forming – the better way

In comparison to chip-creating or die cast processing, there are concise advantages when using the cold form method.

- **Manufacturing costs are definitely reduced**
- **Due to a constant volume material usage is reduced by 80%**
- **By selecting appropriate material and following heat treatment, all areas of mechanical demand are covered**

Growing demands in regards to efficiency, process ability, and product quality can only be satisfied by exact coordination between the involved production processes. Modern multi-die headers include external conversion stations, computer controlled equipment management, and sensory control of materials and tools. It takes one minute to produce 400 complex cold form parts in up to five reshaping steps. Subordinate chip-less or chip-minimizing processes enable the fulfillment of details that cannot be achieved by ordinary heading methods.

Modern equipment alone does not guarantee lasting quality. The basis for our innovation and dependability is our work force. Virtually all machine operators have been formally educated in their fields of work. In addition, continuous self-improvement courses teach individuals the successful completion of assigned tasks. Cold forming projects are administered by self-managed teams who document every process parameter in detail. Integration of every single employee in the TQM-process and process development is therefore not duty, but a natural daily occurrence.

Comparison of material use by forming (left) and turning (right)

Tool-change on computer controlled multi station forging machine

Innovation and precision – the EJOFORM-tooling development

Our objective is to combine a full service during tool making process, a best possible design, minimised tool wear and economical production. A team of skilled employees is taking care of every customer project and product from design stage via tool development to start of production.

EJOT's tooling department is equipped with most modern CNC-controlled machines for working flexible and with high quality. To ensure the highest possible quality, EJOT is using modern wear minimising CVP/PVD-coatings and is testing all tooling materials under labourity conditions.

In order to save costs in production and assembly, the experience of our skilled employees is essential for optimising geometry's and simplifying processes.

tool set for a 5-die / 5 blow header machine

Extra operation for optimum results

The accurate manufactured EJOT fastener elements can be adjusted or improved. That means, depending on the application and their requirements EJOT is also capable of providing the appropriate fastener technique.

Secondary machining
For example with a drilled hole, turned recess, ball and relief grind it is possible to manufacture parts with a complicated shape. A female thread is possible too.

Heat and surface treatment
EJOFORM® parts are made of different materials, which are case- or through hardened steel, Aluminium and if necessary stainless steel. EJOFORM® parts are improved in strength and durability due to different production procedures. The common degree of strength is achieved by heat treatment according DIN ISO 898. EJOT standards apply for special EJOT thread designs.
Galvanised platings comply to DIN EN ISO 4042. More surface treatments up to 1000 hours salt spray test are also available.

Injection moulded
Injection moulding machines in EJOT are capable of injection moulding thermoplastic materials onto fastener surfaces. The EJOFORM(r) part is geometrically specially designed to allow a high torque level to be transmitted with the final products like Nuts, spindles and knobs.

Acupoint®
During automated assembly of metric screws into tapped female threads the start of inserting out of line is a known problem with the result of a destroyed metric thread.
The Acupoint® feature has been developed for correct guidance of the screw into a straight position when starting assembling.

Examples for secondary machining

Moulded parts

Screw with Acupoint®

Current applications

Double ended stud replaces an expensive turned stud. It's used as a central axis for height adjuster in car seats.

Two fastener elements and one Aluminium pipe are replacing an expensive and heavy shaft with a milled profile at the two ends for transmitting appropriate force.

Noncutting ball studs for clipping on ball-joints are used in head lamps for the automotive industry.

Self- drilling and tapping EJOFORM® bolts are responsible for positioning and holding of the metal housing on a central heating boiler. This method saves assembly time, turned parts and nuts and improves the quality of the joint.

Your system partner from start to finish

As a specialist for customer orientated fastener technique, EJOT is offering a full service to our customers from the idea to the final fastener element.

The overall costs of production are heavily influenced during product design stage. A clever design saves materials, production and assembly costs. It is evident that changing parts during production is more costly than optimisation during design stage.

Therefore EJOT designers offer to accompany your design engineers right from the start. Whilst application engineering, EJOT fastener experts show existing safeguard potentials within components and give advise for suitable design for fully automated assembly. Our design centre is using modern CAD-Computer and FEM-simulation.

Application Engineering:
consulting, training, examine

The basic of known EJOT innovations is our daily work on different customer projects. Our high-qualified application engineers are constantly improving existing products, adapting on the ever changing demands on fastener elements. A thorough analysis and optimisation of fastener elements takes place in our Aplitic laboratory.

Our knowledge is freely passed on to our customers in order to support finding of efficient fastener and assembly techniques for their applications. Extensive test reports, engineering advise at site, recognised seminars and publications in specialised literature are all part of the EJOT know-how transfer.

Quality for automated assembly

Successful assembly automation means high utilisation of the equipment. The quality of the screw used for fastening can be a decisive factor for machine uptimes and more efficient assembly process. Traditional trade qualities do not meet the standards needed for automated assembly.

EJOMAT® quality provides a high lot-purity-factor; increasing machine uptimes are leading to decreasing assembly costs.

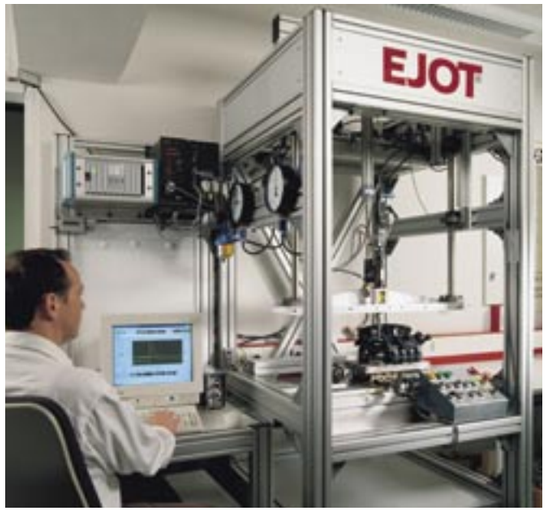
EJOMAT®, Quality that pays for itself.

Tailored EJOT-Logistic

With respect to simplifying procurement EJOT can offer cost saving procedures and services. It is our aim to keep procuring and stockage costs as low as possible by simultaneously offering product availability and product quality. The steady analysis of our customer demands and advanced logistics procedures are leading to the high availability of our products. Skeleton contracts and delivery schedules via electronic data interchange facilitate and accelerate the processing times of our products.

Modern PPS-systems lead to high accuracy in supplying and short through put times

Data exchance with customer



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